

WHAT IS CLAIMED IS:

1. A voltage regulating device for a charging pump, wherein the charging pump outputs an output voltage according to a clock signal while the voltage regulating device comprises:

5 a voltage regulating capacitor whose one terminal is coupled to an output terminal of the charging pump while the other terminal receives an inverse clock signal.

2. The voltage regulating device for a charging pump according to claim 1, wherein the charging pump outputs the output voltage to a load while the capacitance
10 of the voltage regulating capacitor is smaller than the capacitance of the load.

3. The voltage regulating device for charging pump according to claim 1, wherein the charging pump is two-phase.

4. A voltage regulating device for a charging pump, wherein the charging pump outputs an output voltage according to a first clock signal, a second clock signal, a
15 third clock signal, and a fourth clock signal while the voltage regulating device comprises:

a first voltage regulating capacitor whose one terminal is coupled to an output terminal of the charging pump while the other terminal receives a first inverse clock signal;

a second voltage regulating capacitor whose one terminal is coupled to the output terminal of the charging pump while the other terminal receives a second inverse clock signal;

5 a third voltage regulating capacitor whose one terminal is coupled to the output terminal of the charging pump while the other terminal receives a third inverse clock signal; and

a fourth voltage regulating capacitor whose one terminal is coupled to the output terminal of the charging pump while the other terminal receives a fourth inverse clock signal.

10 5. The voltage regulating device for a charging pump according to claim 4, wherein the charging pump outputs the output voltage to a load while the capacitance of the first, the second, the third and the fourth capacitor is smaller than the capacitance of the load.

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